Abstract Submitted
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Overview of NSTX Liquid Lithium Divertor Performance and Divertor Upgrade Plans[1] R. KAITA, H. KUGEL, M.G. BELL, R. BELL, M. DIALLO, S. GERHARDT, M. JAWORSKI, J. KALLMAN, S. KAYE, B. LEBLANC, D. MANSFIELD, J. MENARD, D. MUELLER, S. PAUL, A.L. ROQUEMORE, F. SCOTTI, C.H. SKINNER, L. ZAKHAROV, PPPL, J.P. ALLAIN, Purdue U., A. MCLEAN, R. MAINGI, ORNL, R. NYGREN, SNL, R. RAMAN, U. Washington, S. SABBAGH, Columbia U., V. SOUKHANOVSKII, LLNL — NSTX experiments were conducted in 2010 with a Liquid Lithium Divertor (LLD) surface that covered the outer part of the lower divertor. It was designed to study the deuterium retention properties of a static liquid lithium surface, refreshed by lithium from evaporators to approximate a surface renewed by flowing liquid lithium. The LLD surface temperature ranged from below to above the lithium melting point, depending on the amount of applied and plasma heating. Noteworthy improvements in plasma edge conditions were obtained, and analysis is in progress to compare them with previous lithiated graphite results. Following the end of 2010 plasma operations, repairs were made to the mechanical damage, apparently from plasma current disruptions, to the LLD supports and other hardware, and the LLD was reinstalled. A row of molybdenum tiles was also installed inboard of the LLD. Since the LLD substrate is porous molybdenum, experiments with both inner and outer strike points on lithiated molybdenum will be possible in 2011-12.

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